Listing of Claims

1. (cancelled)

2. (currently amended) A method as defined in claim 24, ~~1, and~~ further comprising the step of determining the optimization of the adjustable parameters by target data selected from the group consisting of editable target data and storable target data.

3-4. (cancelled)

5. (currently amended) A method as defined in claim 24, ~~1, and~~ further comprising the steps of editing and storing the machine-internal data, the machine-external data and the output data by the diagnosis data processing system.

6. (currently amended) A method as defined in claim 24, ~~1, and~~ further comprising the step of operating the diagnosis data processing system in a time controlled manner.

7. (cancelled)

8. (currently amended) A method as defined in claim 24, ~~1; and~~ further comprising the step of using a traveling speed, a rotary speed of at least one threshing drum and/or the rotary speed of a blower of at least one cleaning device as the adjustable parameters to be optimized.

9. (currently amended) A method as defined in claim 24, ~~1; and~~ further comprising the step of using a crop-specific and/or machine-specific parameter as the further parameter; and performing the determination of the further parameter by sensors which are in operative communication with the machine or by inputting.

10. (currently amended) A method as defined in claim 9, ~~; and~~ further comprising the step of using a parameter selected from the group consisting of a grain loss, a grain throughput, a crop moisture, a crop total throughput and a broken corn portion as the further parameter.

11. (currently amended) A method as defined in claim 9, ~~; and~~ further comprising the step of using adjustment regions for parameters of working units of the machine as the further parameter.

12. (currently amended) A method as defined in claim 5, ~~; and~~ further comprising the steps of generating the machine-external data by external

systems and using plant-specific data, geographic data, weather data and/or external expert knowledge as the machine external data.

13. (currently amended) A method as defined in claim 12, ~~; and~~ further comprising the step of using crop and/or data and experience knowledge as the external expert knowledge and as internal expert knowledge.

14. (currently amended) A method as defined in claim 24, ~~1; and~~ further comprising the step of processing a diagnosis selected from the group consisting of process diagnosis, case diagnosis, and model-oriented diagnosis with the chosen ~~at least one~~ process algorithm of the diagnosis data processing system~~device~~.

15-17. (cancelled)

18. (currently amended) A method as defined in claim 24, ~~1; and~~ further comprising the step of generating changed process algorithms by the data processing system depending on machine-interior data and machine-exterior data and with consideration of changeable target data.

19. (currently amended) A method as defined in claim 24, ~~1; and~~ further comprising the step of generating changed specific situation patterns by the data

processing system in dependence on machine-interior data and machine-exterior data and with consideration of changeable target data.

20. (currently amended) A method as defined in claim 24, ~~1; and~~ further comprising the step of storing process algorithms, specific situation patterns or both in data sets, wherein the data sets include at least a part of machine-internal data, machine-external data and target data.

21. (currently amended) A method as defined in claim 24, ~~1; and~~ further comprising the step of incorporating in diagnosis data processing system specific situation patterns and associated process algorithms and/or optimized adjustable parameters to be available for further machines.

22. (currently amended) A method as defined in claim 24, ~~1,~~ wherein the machine is an agricultural harvester; and further comprising the step of defining ~~determining~~ at least one process algorithm depending on harvesting conditions of the agricultural harvester.

23. (currently amended) A method as defined in claim 24, ~~1; and~~ further comprising the step of adapting the process algorithms ~~processing algorithm~~ by analysis and evaluation.

24. (new) A method of optimization of adjustable parameters of at least one machine using a diagnosis data processing system, comprising the following steps:

defining a plurality of specified situation patterns according to data selected from a group consisting of machine-internal data, machine-external data, target data and combinations thereof;

defining a plurality of process algorithms that modify current parameter settings to optimized parameter settings, each of which corresponding to one of the plurality of specific situation patterns;

detecting an instant situation pattern according to sampled data selected from the group consisting of machine-internal data, machine-external data, target data and combinations thereof;

selecting a process algorithm from the plurality of stored process algorithms by comparing the detected instant situation pattern to the stored situation patterns to identify both a stored situation pattern most closely corresponding to the instant situation pattern and the process algorithm corresponding thereto; and

executing the identified process algorithm to optimize the machine adjustable parameters for the detected instant situation pattern.